

**BEFORE THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF APPEALS AND INTERFERENCES**

In re Application of:)	
)	Group Art Unit: 2627
ROBERT GLENN BISKEBORN)	
)	Confirmation No.: 7827
SERIAL NO.: 10/754,392)	
)	Examiner: Daniell L. Negron
FILED: January 9, 2004)	
)	BEA920030016US1
FOR: FLY HEIGHT EXTRACTION SYSTEM)	

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

APPLICANT'S REPLY BRIEF ON APPEAL

Applicant submits this Reply Brief in response to the Examiner's Answer dated
December 26, 2008.

STATUS OF THE CLAIMS

Claims 1-10, 21-26 and 28-30 are in the application.

Claims 11-20, 27 and 31-40 are canceled.

Claims 8, 9, 29 and 30 are withdrawn.

Claims 1-7, 10, 21-26 and 28 are rejected.

Claims 1-7, 10, 21-26 and 28 are appealed.

GROUND FOR REJECTION TO BE REVIEWED ON APPEAL

Claim 1 was rejected under 35 U.S.C. § 102, as being anticipated by Smith (US 2002/0197936).

Claims 2 and 4-7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Smith (US 2002/0197936) in view of Dakroub et al. (US 7113354).

Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Smith (US 2002/0197936) in view of Dakroub et al. (US 7113354) and further in view of Abraham et al. (US 6239,936).

Claim 10 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Smith (US 2002/0197936) in view of Muranushi et al. (US 5153785).

Claims 21, 22, 24-26 and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dakroub et al. (US 7113354) and in view of Smith (US 2002/0197936).

Claim 23 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Dakroub et al. (US 7113354) as modified by Smith (US 2002/0197936) and further in view of Abraham et al. (US 6239,936).

ARGUMENT

The final rejections were discussed in applicant's main Appeal Brief. This Reply Brief responds to the additional points raised in the "Response to Argument" section spanning pages 9-17 of the Examiner's Answer.

Rejection of Claim 1 Under 35 U.S.C. §102

The Examiner raises two main points in his discussion of claim 1 on pages 9-11 of the Examiner's Answer. First, the Examiner argues that Smith does in fact disclose the final paragraph of claim 1 that recites "adjusting the magnetic spacing change value to reflect transducing head wear." Second, the Examiner argues that the preamble of claim 1 is not entitled to patentable weight.

Before addressing these arguments, applicant would like to backtrack to the rejection of claim 1 on page 3 of the Examiner's Answer and raise an additional point regarding the first paragraph of the body of claim 1. Clarification of the rejection as applied to this paragraph may help shed light on the rejection as applied to the second paragraph. The first paragraph of claim 1 recites "calculating a magnetic spacing change value relative to the recording medium and the transducing head." The rejection on page 3 of the Examiner's Answer states that paragraph [0026] of Smith discloses this claim element. However, paragraph [0026] is simply directed to obtaining an initial head-disk spacing measurement per step 82 of Fig. 4. There is no calculation of any change value in step 82, only measurements are taken. The Examiner appears to acknowledge this on page 10 of the Examiner's Answer, where he states on lines 10-

13 that Smith's step 84 is an initial spacing measurement step, and that the amount of head wear is not determined until a second spacing measurement is performed in step 88.

Examiner's First Point Regarding Claim 1

Returning now to the second paragraph of the body of claim 1, the Examiner's first point is that the claimed "adjusting the magnetic spacing change value" is performed as part of Smith's step 88 (see Fig. 4). As explained in paragraph [0028] of Smith, this is the process step in which a second wear level measurement is obtained and then evaluated to determine whether the Smith head burnishing process has achieved a desired wear level. According to paragraph [0026], magnetic spacing is one type of wear measurement that may be used. The Examiner states that a second magnetic spacing measurement does not alone yield the desired head wear value, and instead must be evaluated relative to an initial magnetic spacing measurement obtained in Smith's step 84 (see Fig. 4). This "evaluation," the Examiner argues, represents the claimed "adjusting." In the Examiner's words: "It is considered disclosed by Smith that in order to reflect head wear, the second magnetic spacing measurement is adjusted with respect to the initial magnetic spacing measurement (see paragraph 28, lines 7-11)."

Applicant's position relative to the evaluation = adjusting argument can be found in his opening Appeal Brief at page 9, line 10 through page 10, line 5. Supplementing this initial discussion, Applicant would additionally point out that the evaluation procedure discussed in Smith's paragraph [0028] is its own refutation of the Examiner's argument. This paragraph discusses two evaluation embodiments, neither of which involves any adjustment of a magnetic spacing change value, or any other type of adjustment.

The first evaluation embodiment is discussed at lines 5-9 of paragraph [0028]. An absolute height change value is predetermined and programmed into the disk drive operating system (i.e., stored). This is the target height change value. The actual change between the measured initial spacing value and the secondary wear level value is then compared to the stored height change value to see if this target value has been reached. This would be represented by the equation (1):

$$(1) \quad \text{initial spacing value} - \text{secondary wear level value} = \text{stored height change value}$$

The left hand side of equation (1) is a simple subtraction operation involving the initial and secondary spacing values to determine the actual height change that has occurred. This cannot be the “adjusting” recited in the second paragraph of claim 1 because the Examiner would then need to demonstrate where Smith discloses the first paragraph of claim 1, which recites “calculating a magnetic spacing change value” Moreover, the actual height change value resulting from the subtraction operation is never “adjusted.” It is simply compared to the stored height change value on the right hand side of the equation to see if enough slider material has been removed. This is an evaluation operation, which brings us back to the Examiner’s initial position that an evaluation is an adjustment. This is not a supportable proposition. Comparing a first number to a second number to see if they are equal does not “adjust” either number. The comparison simply produces a binary answer – “yes” or “no.”

Smith's second evaluation embodiment is discussed at lines 9-13 of paragraph [0028]. A predetermined wear value is calculated based on a programmed analysis. This is the target wear value. Then the measured secondary wear level value is simply compared against the calculated wear value. The equation for this operation is even simpler than the first embodiment:

$$(2) \quad \text{secondary wear level value} = \text{calculated wear value}$$

Again, there is no adjustment performed according to this embodiment. There is only a simple comparison operation.

Based on the foregoing, applicant submits that the Examiner's first point regarding claim 1 is not persuasive. The evaluation step of Smith's step 88 is exactly what it purports to be – an evaluation based on comparing measured data to a predetermined value to determine if a desired wear level has been achieved. Step 88 does not disclose the subject matter of the second paragraph of claim 1 that recites “adjusting the magnetic spacing change value as necessary to reflect transducing head wear.” Step 88 does not disclose any type of adjustment.

Examiner's Second Point Regarding Claim 1

The second point raised by the Examiner regarding claim 1 is a new issue, namely, that the preamble is not entitled to patentable weight. Applicant respectfully traverses. The preamble of claim 1 states that the claimed method is for monitoring fly height between a magnetic recording medium and a transducing head. The Examiner relies on two CCPA cases.

However, the first case, *In re Hirao*, 53 F. 2d, 67, 190 USPQ 15 (CCPA 1976), does not deal with the issue of giving patentable weight to a preamble. The issue in that case was whether the preamble could be used to broaden the claim notwithstanding the elements of the claim body. In the second case, *Kropa v. Robie*, 187 F. 2d 150, 152, 88 USPQ 478, 481 (CCPA 1951), the preamble was given patentable weight, which supports applicant's position in the present appeal.

The *Kropa* case states that a preamble will be given patentable weight if it breathes life and meaning into the claim. In applicant's claim 1, the elements of the claim body do not inform as to the purpose of the calculating and adjusting steps. It is the preamble which advises that these steps are performed in the context of monitoring the fly height between a magnetic recording medium and a transducing head. This instructs regarding the manner in which the claim steps should be performed, particularly the second paragraph. One needs to know what is being calculated, in this case fly height, in order to perform the "adjusting."

Accordingly, the preamble of claim 1 should be given patentable weight, and the monitoring of fly height must be construed as an affirmative claim element.

Rejection of Claims 2 and 4-7 Under 35 U.S.C. § 103(a)

Claim 2

Claim 2 depends from claim 1 and further recites "wherein said magnetic spacing change value is calculated from media noise sensed on the recording medium." The Examiner argues on pages 11-12 of the Examiner's Answer that Smith discloses measuring head spacing using a number of known techniques, including magnetic spacing, and that Dakroub et al.

teaches measuring media noise to determine head spacing. However, the Examiner does not present any reason why a person of ordinary skill in the art would glean from Dakroub et al. that a white noise readback signal could (or should) be used to measure magnetic spacing in Smith. The Examiner does not demonstrate any correlation between the magnetic spacing measurement technique mentioned in Smith and the white noise readback signal evaluation discussed in Dakroub et al.

The two techniques appear to serve quite different purposes. In Smith, the magnetic spacing measurement technique is used to quantitatively ascertain a head wear value. In Dakroub et al. the white noise readback signal is evaluated qualitatively by looking for a peak amplitude. Dakroub et al. does not say anything about magnetic spacing measurement. The white noise peak amplitude signature signifies that a head crash is imminent, but does not provide any numeric head spacing value. As can be seen in Fig. 4 of Dakroub et al., the value of interest is the disk speed at peak amplitude. This indicates whether the disk drive is “high flying” and crashes only at low disk speeds, or “low flying” and crashes even at high disk speeds. See column 5, lines 45-51. In Smith, the head is already on the disk surface as part of the burnishing process, so the concept of monitoring a white noise signal for an impending head crash is meaningless. Based on the foregoing, it will be seen that the tracking of a white noise signal for a characteristic peak amplitude head crash signature, as per Dakroub et al., does not bear any practical relationship to Smith’s magnetic spacing measurement to determine an actual numerical spacing value for a head that is already in contact with a disk surface. Combining these references is like trying to fit a square peg in a round hole.

Claims 4-6

Insofar as the Examiner's Answer raises no arguments that are specific to claims 4-6, applicant has no further comments on these claims.

Claim 7

Claim 7 depends from claim 1 and further recites "wherein transducing head wear is determined by measuring transducing head signal amplitude after accounting for changes in amplitude due to conditions other than transducing head wear." The Examiner attempts to explain on page 13 of the Examiner's Answer why Dakroub et al. would have resulted in a modification of Smith to achieve the claimed subject matter. As best can be determined, the Examiner's argument is that Dakroub et al. teaching taking into account the changes that occur to a readback signal amplitude due to an impending head crash. However, as stated in applicant's opening Appeal Brief, Smith would never be modified to account for an impending head crash because the head is always in contact with the disk surface while the head is being burnished. The Examiner's further statement about achieving the ability to identify, remove and replace marginal components is not seen to be pertinent to the discussion of claim 7. The ability to identify, remove and replace such components in Dakroub et al. is only mentioned in the background section, but presumably stems from the ability to identify drives with "low flying heads" that are prone to head crashes. See column 5, lines 45-51 and Fig. 4. Again, head crashing is not a concern in the Smith reference, which pertains to head manufacture prior to operational testing.

Rejection of Claim 3 Under 35 U.S.C. § 103(a)

Insofar as the Examiner's Answer raises no arguments that are specific to claim 3, applicant has no further comments on this claim.

Rejection of Claim 10 Under 35 U.S.C. § 103(a)

Insofar as the Examiner's Answer raises no arguments that are specific to claim 10, applicant has no further comments on this claim.

Rejection of Claims 21, 22, 24-26 and 28 Under 35 U.S.C. § 103(a)

Claim 21

The Examiner raises three points on pages 14-15 of the Examiner's Answer regarding claim 21. The first and third points have already been discussed and will not be repeated. In particular, the first point concerns whether the claim preamble should be given patentable weight. The previous discussion on this subject in connection with claim 1 applies with equal force to claim 21. The third point pertains to whether Smith discloses adjusting a magnetic spacing change value. This was also discussed in connection with claim 1.

The second point raised by the Examiner in connection with claim 21 is that Dakroub et al. discloses "detecting from media noise a change in magnetic spacing, in this case a distinct media landing noise signature, which specifically indicates when a head is about to contact the media (column 5, lines 15-18)." As previously discussed in connection with claim 2, only a landing noise peak amplitude signature is determined in Dakroub et al. There is no calculation of a magnetic spacing change value from media noise. There is no mention of magnetic spacing at all, only signal amplitude. As can be seen in Fig. 4 of Dakroub et al., the value of

interest is the disk speed at peak amplitude, which indicates whether the disk is “high flying” or “low flying.” See column 5, lines 45-51.

Claim 22

Claim 22 depends from claim 21 and further recites “wherein said media noise is generated by forming a substantially random pattern of magnetic domains on the recording medium using one of an A.C. erasure technique, a D.C. erasure technique or a bulk erasure technique.” The Examiner makes an argument on pages 15-16 of the Examiner’s Answer that is unsupported by any evidence of record. In particular, there is no record support for the factual assertion that conventional magnetic disk drives are subject to erasure during manufacturing. Moreover, there is no evidence that the nonrecorded disk areas from which media noise is sensed in Dakroub et al. are erased, or if so, whether this is done prior to or after the media noise is sensed.

Claims 24-28

Insofar as the Examiner’s Answer raises no arguments that are specific to claims 24-28, applicant has no further comments on these claims.

Rejection of Claim 23 Under 35 U.S.C. § 103(a)

Insofar as the Examiner’s Answer raises no arguments that are specific to claim 23, applicant has no further comments on this claim.

CONCLUSION

Based on the foregoing, applicant submits that the claims in the present application clearly and patentably distinguish over the cited references. It is therefore again respectfully requested that the Examiner be reversed and directed to pass the application to issue.

Respectfully submitted,

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